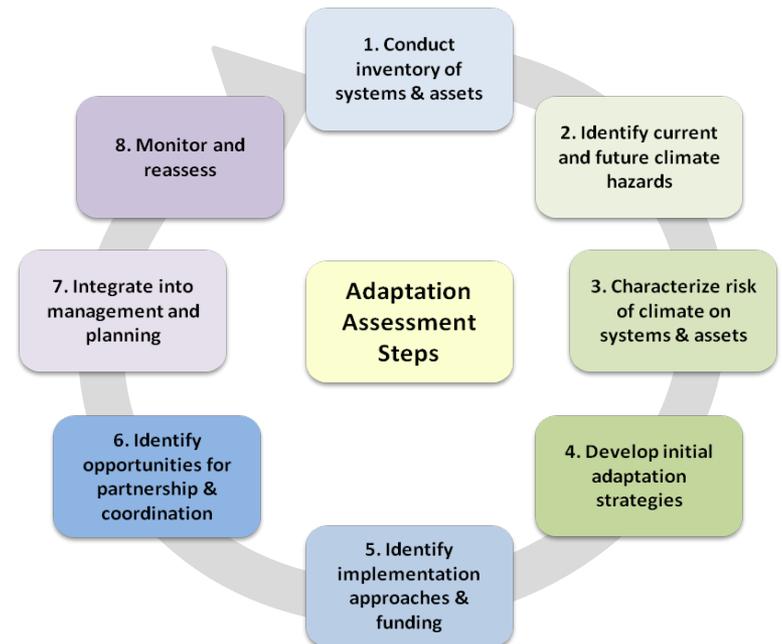




Resilience and Adaptation to Climate Risks Workshop: Stennis Space Center Area

October 16-18, 2012

Roy Estess Administration Building
Logtown Conference Room





Stennis Space Center

Welcome

*Mark Glorioso, Director
Center Operations Directorate
Stennis Space Center*



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Climate

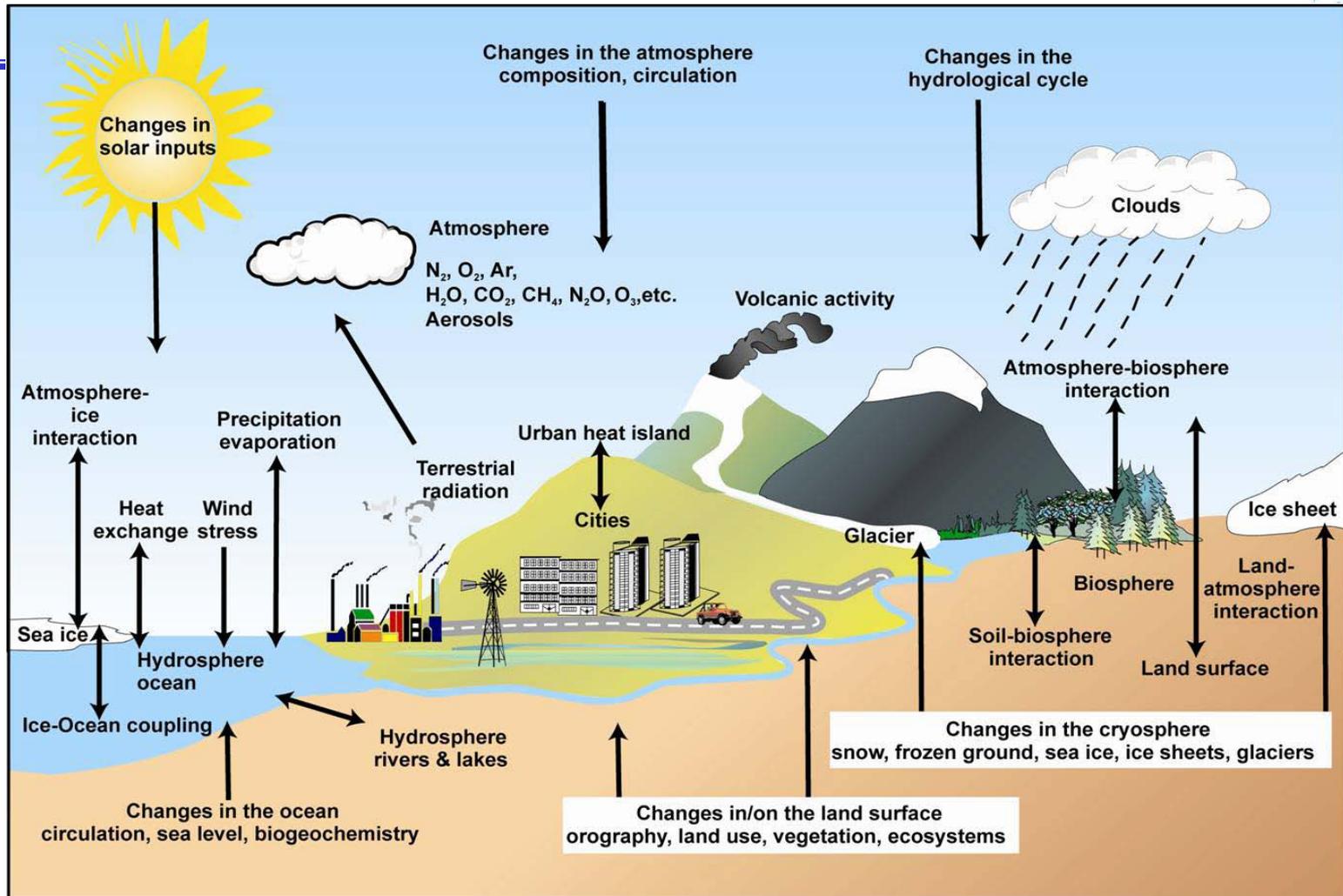
Olga Dominguez
Assistant Administrator
Office of Strategic Infrastructure
NASA Headquarters



*The Earth is a Closed Loop System
with many sub-systems; there is no "away"*



Earth Sub-Systems



Many sub-systems — atmosphere, land, oceans, snow, urban landscape, etc — affect daily weather and longer-term climate. That is why predicting weather and modeling climate change is very complicated — all of these systems have many inputs and outputs.



Why are we here



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NASA's assets are subject to impacts from climate variability and a changing climate; the institutional community must manage the risks these impacts pose.

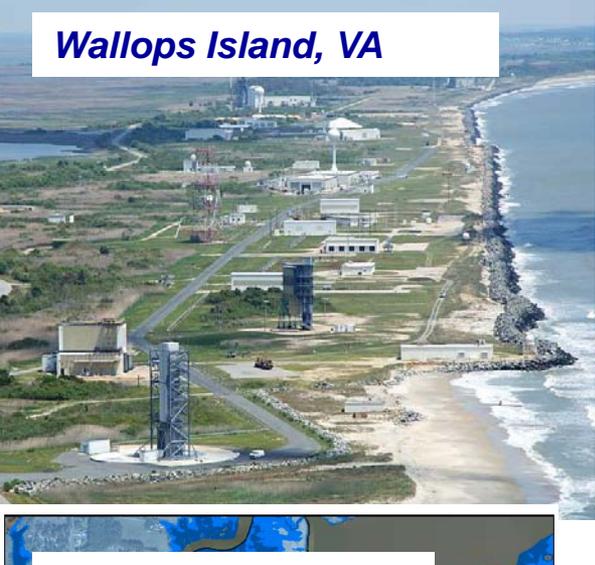


Fortunately, **NASA scientists** have information and data about climate and weather that can help us plan.

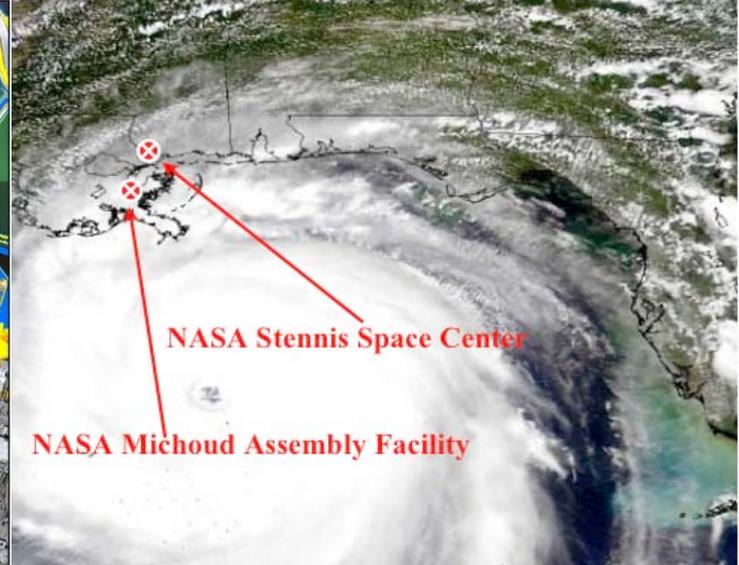


Over 2/3rds of all NASA's constructed real property value is within 16 feet of sea level (≈\$20B)

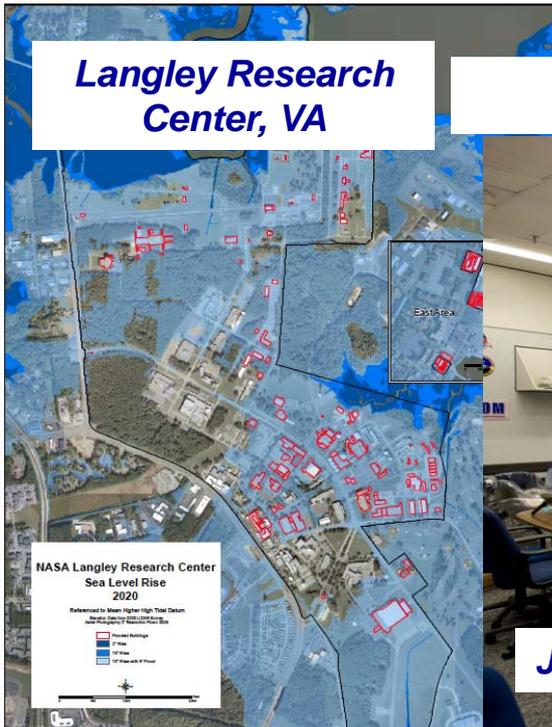
Wallops Island, VA



Ames Research Center, CA



Langley Research Center, VA



..and are already feeling impacts....

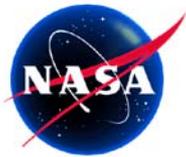
Impact from Nor'easter



Johnson Space Center, TX



Kennedy Space Center, FL

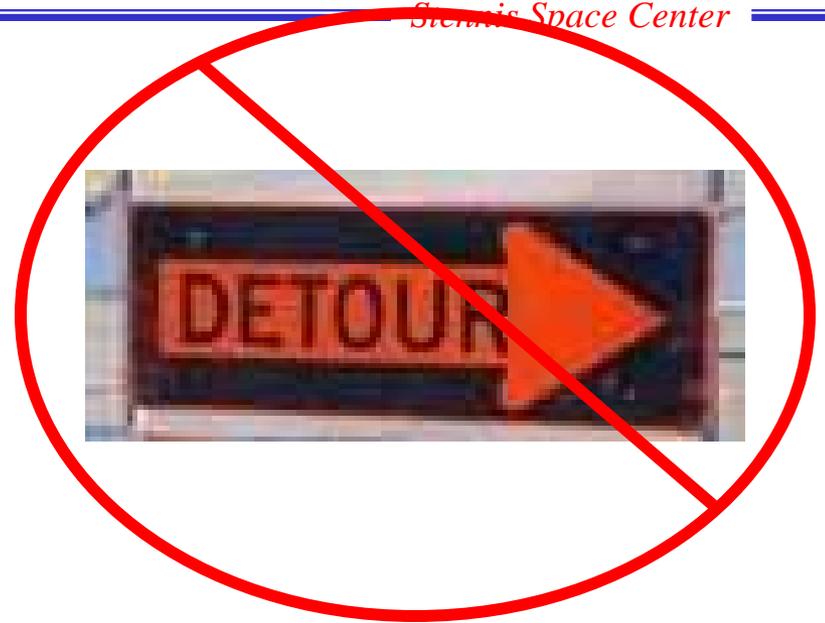


Integrate – No New Plans



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For NASA's institution to succeed in support of NASA missions, we need a *slight shift* from what we are doing now.....Incorporate the data and information that NASA Earth Scientists develop and apply it to our institutional risks.



Climate risk adaptation is the process of considering climate impacts and adjusting our designs and management practices (within our existing NASA processes) to mitigate mission risk.





Focus of our Workshop



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Institutional Stewards + Climate Scientists =
Our Adaptation Workshop

Any questions?



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Welcome

Cynthia Rosenzweig, Ph.D.

*Leader of the Climate Impacts Research Group at
NASA's Goddard Institute for Space Studies*

and

Co-Chair New York City Panel on Climate Change



Applied Science & Technology Project Office

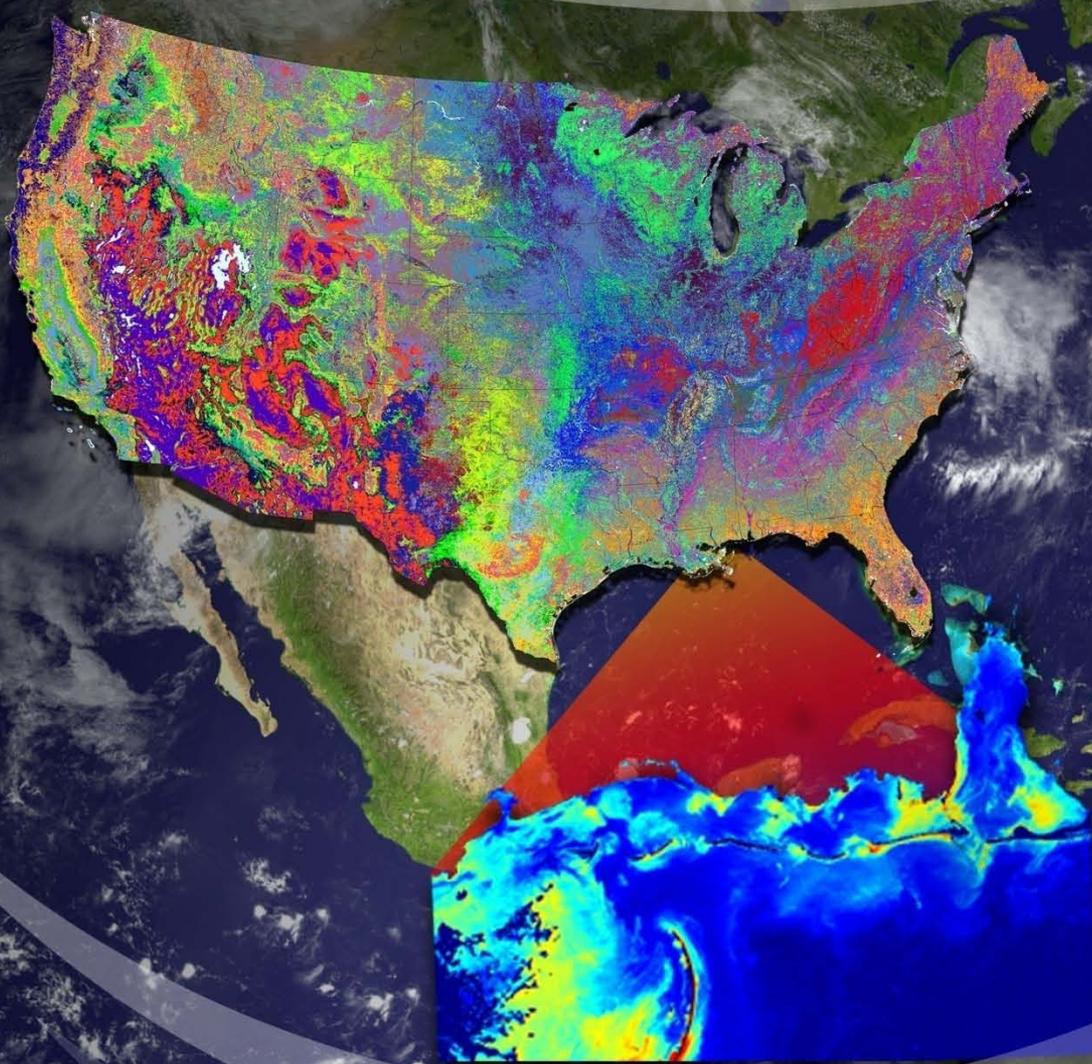
Making a difference
in the Gulf,
across the country,
and around the world.

Duane Armstrong, Chief
October 16, 2012

<http://science.ssc.nasa.gov>

SCIENCE@SSC

- Performs Scientific Research That Benefits The Nation And The Region
- Coordinates Multi-Agency Scientific Research Initiatives For NASA HQ
- Represents NASA On National And Regional Scientific And Policy-Making Bodies



Provides National Exposure for NASA Science



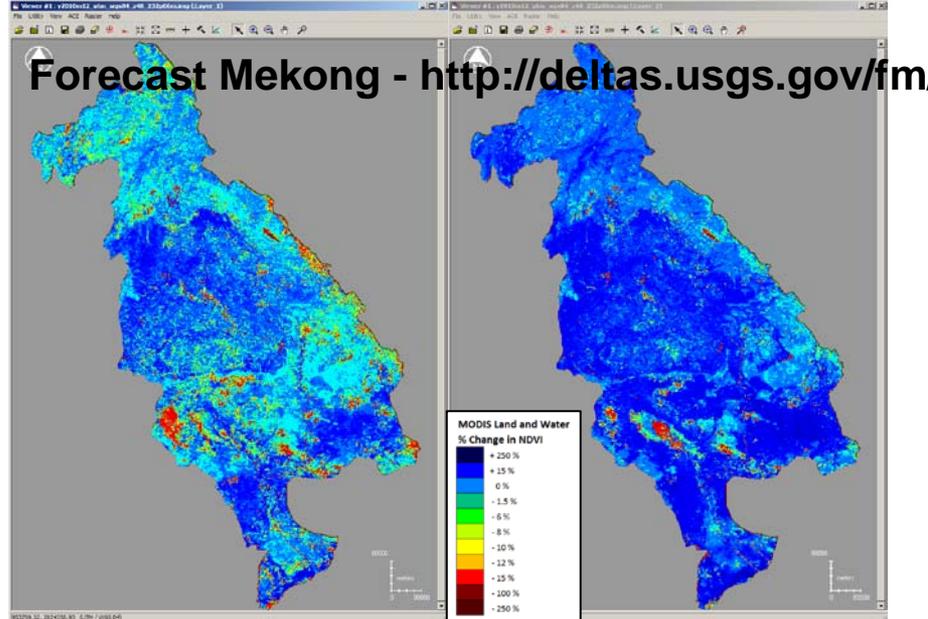
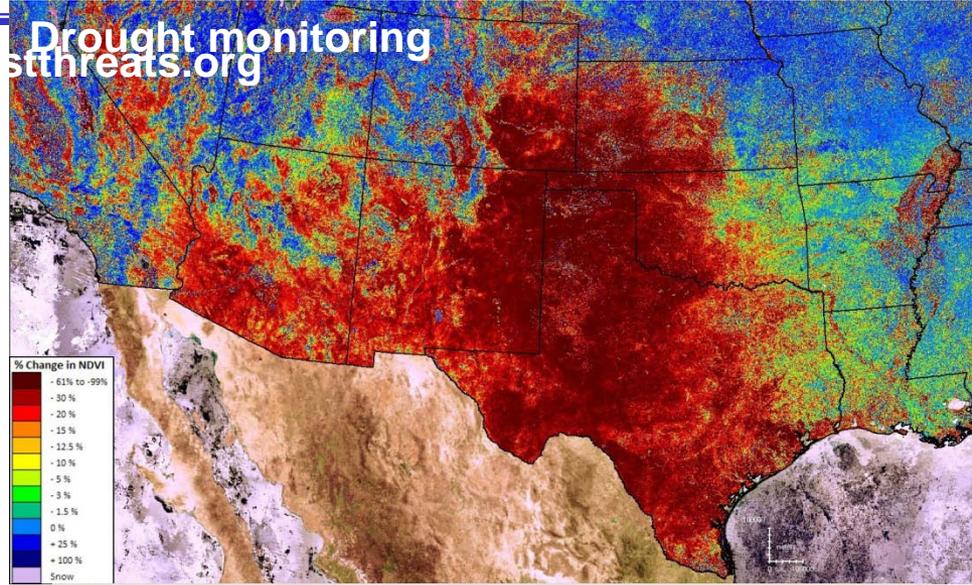
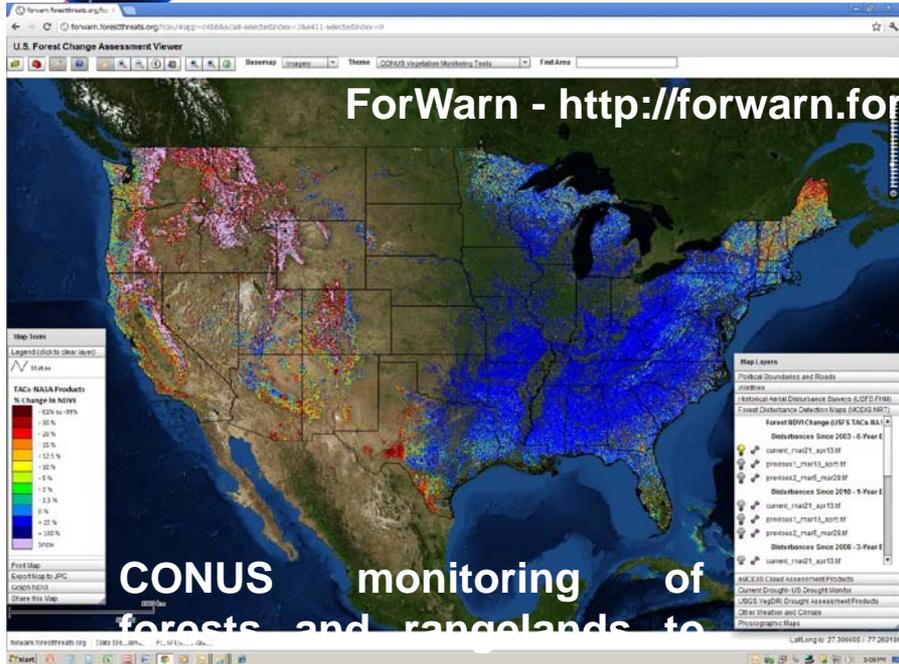
Enables Students to Participate In NASA Research



Develops Environmental Monitoring Technologies

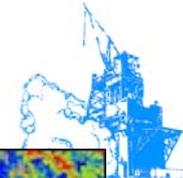


Land Use Land Cover

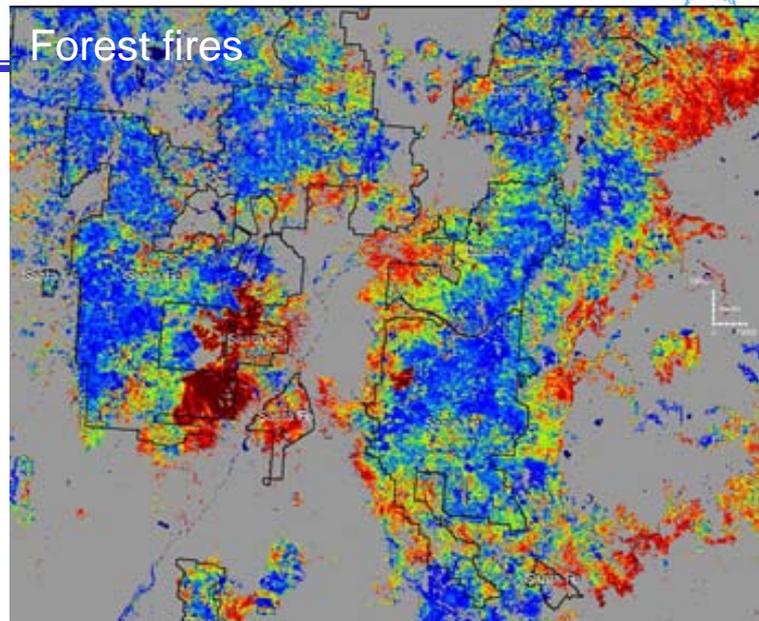




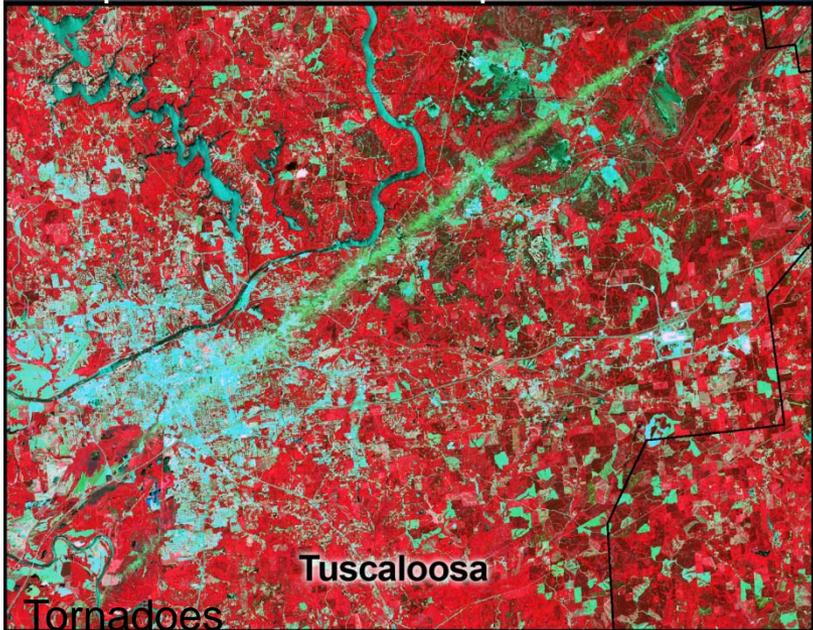
Disasters



Deepwater Horizon oil spill

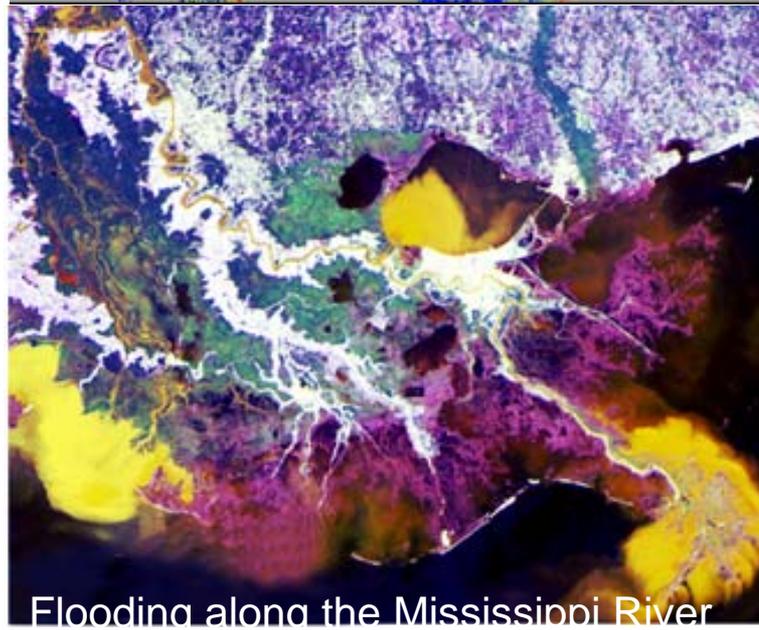


Forest fires

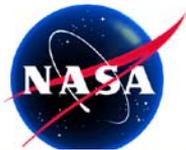


Tuscaloosa

Tornadoes



Flooding along the Mississippi River



DRIFTER – Educational Outreach



Applied Science & Technology Project Office

ASTPO

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 - ROSES A.40
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- Technology
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THE DRIFTER PROJECT

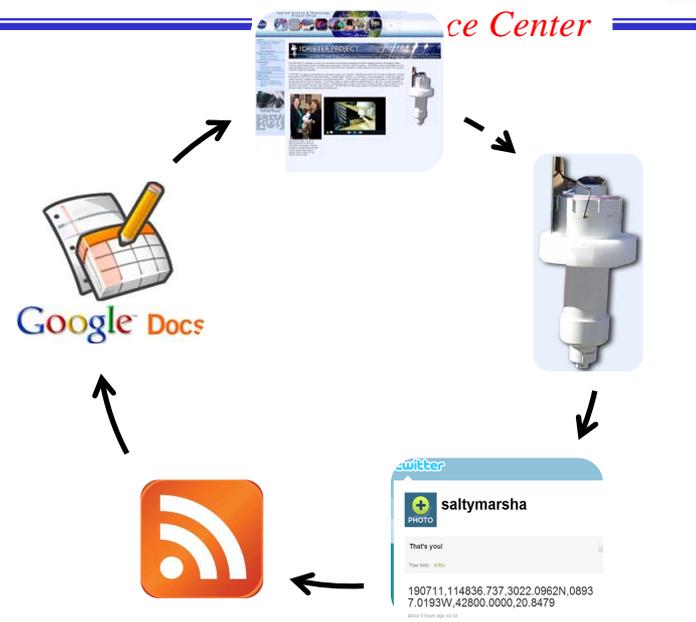
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The DRIFTER is a versatile, low cost, environmental monitoring buoy designed by NASA's Applied Science & Technology Project Office at Stennis Space Center to enable public participation in NASA's scientific research. DRIFTERs measure parameters such as water temperature and salinity. This information helps refine data collected by NASA satellites and aircraft and improve the accuracy of NASA models and forecasts.

A DRIFTER can easily be assembled and operated by high school students. Detailed instructions are provided to assemble, calibrate and operate a DRIFTER that measures salinity in coastal waters; however, you are free to, and encouraged to, modify this design to collect the data to address important environmental parameters. A GPS system is used to monitor the position of the DRIFTER and log the time when the data is acquired. A cell phone modem is used to tweet the collected data to a web site. A simple computer in the DRIFTER configures and controls the buoy. Spreadsheets can be used to retrieve and analyze the data, map the position of the DRIFTER, and share it with other users via the web. The DRIFTER provides many options for teachers and students to explore different fields of science, engineering and mathematics.



Maria Kalcio (right), senior research scientist for the CSC information technology company at Stennis, present Hancock High School teacher Shami Bourn a salinity drifter module for her aquatic science class.



Hancock High School students b

Enable public participation in NASA scientific research